

**Notice of Allowability**

Application No.

10/662,069

Examiner

David Nhu

Applicant(s)

CHAN ET AL.

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/11/03.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 11 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 01
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.



### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the change and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Attorney, Randy W. Tung, on 7/19/04.

The application has been amended as follows:

***Claim 13***, "linewidth of from about 0.01 to about 0.02 microns" should be ~~linewidth of from about 0.01 to about 0.03 microns--~~ "linewidth of from about 0.02 to about 0.13 microns" should be ~~linewidth of from about 0.02 to about 0.03 microns--~~ See page 11, 16 of the specifications.

***Claim 19***, "linewidth of from about 0.09 to about 0.13 microns" should be ~~linewidth of from about 0.04 to about 0.13 microns--~~ See page 11.

### REASONS FOR ALLOWANCE

2. Claims 1-20 are allowed.

3. The following is an examiner's statement of reasons for allowance: None of the references of record teaches or suggests as cited in claims 1, 9, 15: etching vertically incompletely the blanket target layer while employing a plasma etch method and the patterned mask layer as an etch mask to form an incompletely vertically etched blanket target layer and an etch residue layer upon a sidewall of the patterned mask layer; removing the patterned mask layer from the incompletely vertically etched blanket target layer; etching further the incompletely vertically etched blanket target layer while employing the plasma etch method to form a further etched incompletely vertically etched blanket target layer having formed thereupon a laterally

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increased etch residue layer; etching further the further etched incompletely vertically etched blanket gate electrode material layer while employing the plasma etch method and the laterally increased etch residue layer as an etch mask to form a patterned target layer ( as cited in claim 1); etching vertically incompletely the blanket target layer while employing a plasma etch method and the patterned mask layer as an etch mask to form an incompletely vertically etched blanket gate electrode material layer and an etch residue layer upon a sidewall of the patterned mask layer; removing the patterned mask layer from the incompletely vertically etched blanket gate electrode material layer; etching further the incompletely vertically etched blanket gate electrode material layer while employing the plasma etch method to form a further etched incompletely vertically etched blanket gate electrode material layer having formed thereupon a laterally increased etch residue layer; etching further the further etched incompletely vertically etched blanket layer while employing the plasma etch method and the laterally increased etch residue layer as an etch mask to form a gate electrode (as cited in claims 9, 15).

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **CONCLUSION**

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Linliu et al (6,110,837): Method for Forming a Hard Mask of Half Critical Dimension

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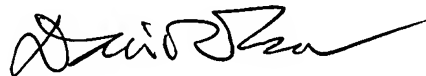
6. Any inquiry concerning this communication on earlier communications from the examiner should be directed to David Nhu , (571)272-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM.

The examiner's supervisor, David Nelms can be reached on (571)272-1787.

*The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.*

*Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.*

David Nhu



July 19, 2004

**DAVID NHU**  
**PRIMARY EXAMINER**